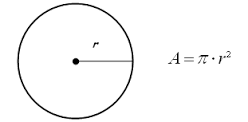
**CAT-4 - English helpful hints and questions**

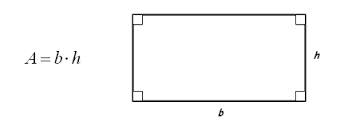
**Formulas/Information to know:**

Perimeter of any figure: add the lengths of all sides together

Area of a circle = πr2

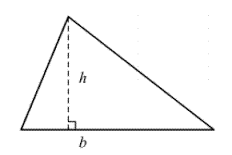
[](http://www.google.ca/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&ved=0CAcQjRw&url=http://www.notes99.com/2014/03/c-area-and-circumference-of-circle.html&ei=iytDVIBg6vuKAqGWgKgF&bvm=bv.77648437,d.cGE&psig=AFQjCNGEid1u4sgfIM_HKwipNDUitGi1hA&ust=1413774584639712)

Area of a rectangle or a square = b(h)

[](http://www.google.ca/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0CAcQjRw&url=http://www.gradeamathhelp.com/geometry-formulas.html&ei=ASxDVLaoHqzoiQLuxYH4BA&bvm=bv.77648437,d.cGE&psig=AFQjCNFJV9wOKBgPV0Djis6V6rOVaJ8UWQ&ust=1413774664034508)

Area of a triangle: b(h)

2

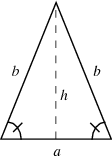
[](http://www.google.ca/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0CAcQjRw&url=http://math.tutorvista.com/geometry/triangle.html&ei=iC1DVP6sC4P2iQKA9IGQBQ&psig=AFQjCNHblBTPso2hfkhhcMjExDwvn9dpyg&ust=1413774780839285)

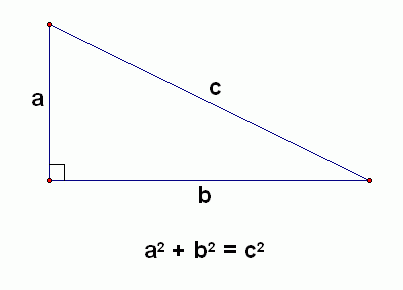
To find surface area, you take the area of each side of the figure, then add them all together.

Total degrees in a circle = 360°

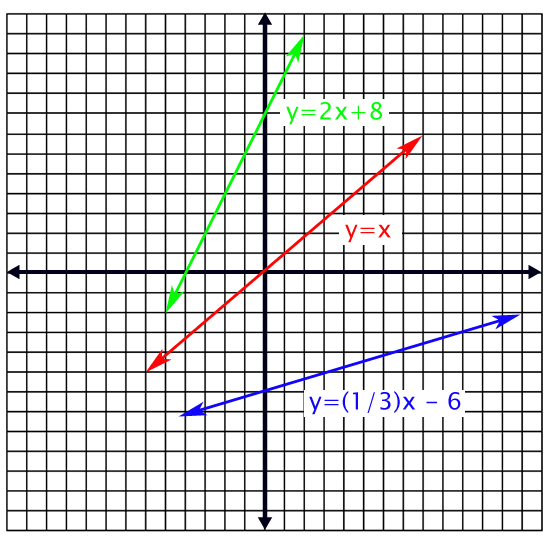
Total degrees in a triangle = 180°

Total degrees in a quadrilateral (4 sided figure) = 360°

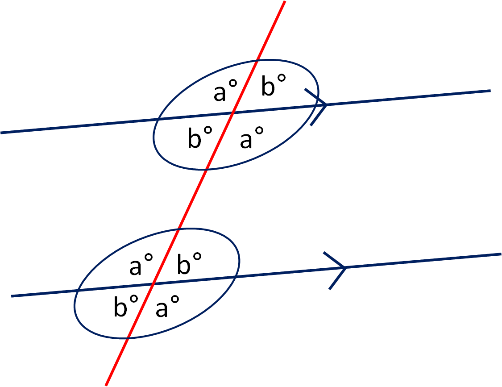
Isosceles triangles – have 2 sides that are equal and 2 angles that are equal 

For a right triangle with sides a, b and c (hypotenuse): a2 + b2 = c2 

Equation of a line: y = mx + b where m is the slope and b is the y-intercept



Parallel lines create many angles that are congruent (equal) or supplementary (= 180°)



To solve proportions: x = 4 you have to cross multiply and solve the equation: 3(4) = 12x

3 12

Mean = average. To find the mean, add all the numbers together, then divide by the amount of numbers you added together.

5% = 5

100

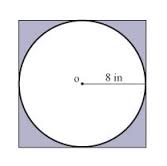
BEDMAS = order of operations

Scientific notation: 5.6 x 103 = 5600 5.6 x 10-3 = 0.0056

1 litre = 1000mL

**Practice Questions:**

1. Find the area of the shaded part:

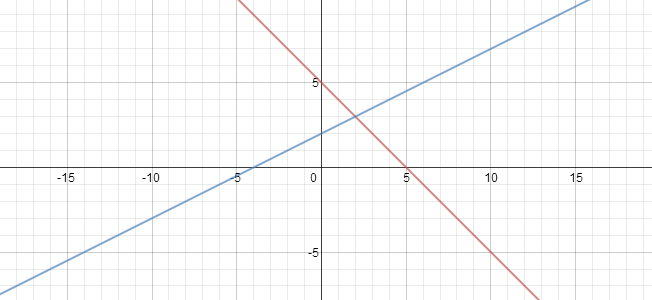
[](https://www.google.ca/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0CAcQjRw&url=https://sites.google.com/site/geometry4sage20112012/home/resources/star-lessons/lesson-15--polygons&ei=PzZDVOOyDuL1iQK76YGIBQ&psig=AFQjCNHZPckCiLbey1MXBEiCCbOhjEQQSg&ust=1413777192844801)

1. Find the measure of angle x:

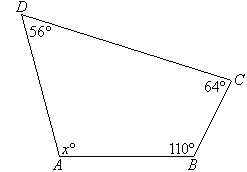
x°

20°

1. What are the equations of these lines?



1. If 0.5 x = 12, what is the value of x?
2. Is the point (3,4) on the line y = 2x – 1?
3. If I can drive 100 km with 7.2 L of fuel, how far can I drive with 80L of fuel?
4. What is the value of x in this diagram?



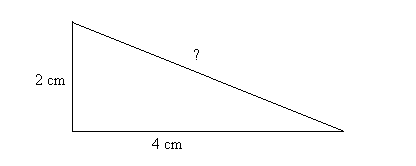
1. What is the value of x in this diagram (assuming the lines are parallel)?

120°

x°

45°

1. Find the length of the missing side:



1. For the diagram, a) find the perimeter b) find the area.

12 cm

10cm

7cm

8cm

1. If I have a round pizza cut into 8 equal slices, what is the size of the angle formed at the centre of the pizza with each piece?
2. Solve: a) 2x – 3 = 5x + 9 b) 2x + 3y =12, if y = -6
3. Simplify:
4. (3x3)4 b) (2x2) (8x4) c) d) e) +
5. I ate 3 Hallowe’en treats on Thursday, 4 on Friday and 8 on Saturday. What percentage of all treats did I eat on Friday?

15. a) Write in scientific notation: i) 345000 ii) 0.0000345

b) Write as a number i) 1.23 x 107 ii) 1.23 x 10-5

c) Simplify: i) (1.2 x 107)2 ii) (1.2 x 107) (3.4 x 10-2)

1. If a 1.6 m pole casts a shadow 3m long, how tall is a tree that casts a 5 m shadow?

**Answers:**

1. 54.9 m2 **2.** 140° **3.** y = -x + 5 y = ½ x + 2 **4.** 24 **5.** No

**6.** 1111.1km **7.** 130° **8.** 15° **9.** or 2 **10. a)** 42 cm **b)** 86cm2

**11.** 45° **12. a)** -4 **b)** 15 **13.a)** 81x12 **b)** 16x6 **c)** 13/12 or 1 1/12

**14.** 26.7% **15a) i)** 3.45 x 105 **ii)** 3.45 x 10-5 **b) i)** 12 300 000 **ii)** 0.000 012 3

**15**. c) i) 1.44 x 1014 **ii)** 4.08 x 105 **16.** 2.7m